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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: SOL AISENBERG ET AL)
) Group Art Unit:
) 3742
Serial No: 09/679,096)
)
Filed: October 4, 2000)
) Examiner:
For: DRYER) Jeffery

DECLARATION UNDER 37 C.F.R. § 1.132

Denis Gagnon declares and says as follows:

1. I am the president of Excel Dryer, the assignee of the above-referenced patent application (referred to herein as the '096 application).
2. I have read the '096 application, and I have read the Examiner's Office Action dated June 3, 2002 in which the Examiner submits that the claimed invention would have been obvious to one of ordinary skill in the art at the time of invention.
3. I have been aware of a long felt need in the dryer industry for a hand dryer that provides rapid drying. As disclosed in the specification of the '096 application, the hand dryer defined in pending claims in the '096 application provides rapid drying.
4. Submitted herewith is documentary evidence supporting my knowledge of a long felt need in the dryer industry for a hand dryer that provides rapid drying as defined in pending claims in the '096 application.
5. Attached as Exhibit 1 is a copy of an article from the Wall Street Journal acknowledging that existing hand dryers are slow and ineffective, requiring 45 seconds to dry the hands. The article notes that most people don't wait that long leaving hands cold, clammy and still wet.
6. Attached as Exhibit 2 is a copy of an article from the Maintenance Supplies

Magazine acknowledging that existing hand dryers requiring 30-45 seconds to dry the hands exceed user's patience.

7. Attached as Exhibit 3 is a copy of an article from the Environmental Building News acknowledging that existing hand dryers take too long to dry hands.

8. I hereby declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful statements may jeopardize the validity of the application or any patents issued therefrom.

8/26/02
Date

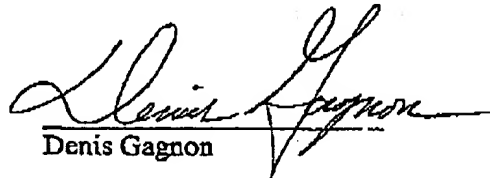

Denis Gagnon

EXHIBIT 1

Reprinted from THE WALL STREET JOURNAL.

TUESDAY, JULY 25, 2000

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ENTERPRISE

Electric Hand Dryer Takes Steps to Blast Paper Towels

Excel Readies a New Model That Will Drastically Shorten Drying Time

By RODNEY HO

Staff Reporter of THE WALL STREET JOURNAL

The electric hand dryer is the public restroom's version of the Yugo: slow, ineffective and easily mocked.

But one small manufacturer, Excel Dryer Corp. of East Longmeadow, Mass., is attempting to spiff up the much-vilified machine and make it purr like a Ferrari.

Paper towels take an average of 12 seconds to dry hands, studies show. But force people under a hand dryer, and the ritual can take an interminable 45 seconds to work. No surprise that most people don't bother sticking around that long, leaving their hands cold, clammy and still wet.

"I don't know that I've ever had a hand dryer actually dry my hands," says Newport Beach, Calif., product developer George Margolin, who has never waited 45 seconds. "Perhaps a finger or two, but a hand?"

Hand-dryer makers have the unenviable task of selling a product almost nobody likes. They acknowledge that nine out of 10 people opt for paper towels when given a choice. And when paper towels are absent, many seek alternatives such as toilet paper. Lain Ehmman, a Boston mother of two, grabs wads of napkins before entering washrooms at fast-food restaurants that she knows use hand dryers, such as the local McDonald's. (McDonald's Corp. says it gives its franchisees the option to use either paper towels or hand dryers.)

Excel, the No. 2 hand-dryer manufacturer, has found a way to shorten the drying process to a mere 10 to 15 seconds, giving it a fighting chance against the paper towel, which dominates about 95% of public washrooms. The company introduced its XLERator dryer at a recent trade show where representatives from Home Depot Inc., Walt Disney Co., Marriott International Inc. and other washroom operators asked to schedule special demonstrations. Even Randy Cordova, president of Excel's larger rival World Dryer Corp. of Berkeley, Ill., was impressed enough to jokingly tell Excel President Denis Gagnon: "If it works out, we might have to partner with you."

Excel's current customers are mainly places that care more about dollars and cents than the end user's comfort. Vandal-prone schools, prisons and fast-food places extol hand dryers because they save money on janitorial maintenance and paper-towel costs.

But paper-towel manufacturers are

unperturbed and for good reason. "Hand dryers have a serious perception problem to overcome," says Andy Clement, a Kimberly-Clark Corp. spokesman.

Kimberly-Clark helped finance a 1998 study that shed a negative light on hand dryers. The study by the University of Westminster, London, found that older hand dryers that aren't well maintained can increase bacteria on hands. "Since the inlet is in the same room as the outlet, bugs from people's hair and skin get sucked in and blown back out onto people's hands," says Keith Redway, a British microbiologist, who doesn't recommend hot-air dryers in sensitive areas such as hospitals and food-preparation areas.

Mr. Gagnon, the Excel president, dismisses the study as full of hot air. Dryers, he says, are hot enough to kill off ambient bacteria and have fewer germs than the sink, citing an independent 1991 University of Ottawa study contradicting the Westminster report.

The prototype, which Excel plans to have in production by the end of the year, is larger than a typical hand dryer and is shaped, as Mr. Gagnon says, "like a horse's behind." With a circular nozzle coming out of the bottom, the machine pumps out air several times faster than a typical dryer.

At the Construction Specifications Institute trade show in Atlanta last month, Excel gave passersby a literal hands-on demonstration. Testers washed their hands and tried a regular hand dryer, then rewet their hands and used the XLERator. An Excel representative held a yellow stopwatch to prove that the new dryer is three times faster.

"It's like a rocket!" says Jerry Cicciari, a Commack, N.Y., architect, as he dries his hands in 15 seconds, compared with 50 seconds on the old one. He notes, however, that the machine is too loud, measuring in at a whining 90 decibels — about twice as loud as many current models.

Mr. Gagnon, a 50-year-old former toy marketing executive for Hasbro Inc. who bought Excel in 1992, grins and apologizes for the noise. He says the machine is being redesigned to be quieter.

The hand dryer, invented in 1948 by Chicagoan George Clemens, has gone through only minor improvements over the years, the most recent being the no-touch sensor. The industry sells no more than \$40 million a year in the U.S.

It took the prodding of Invent Resources

Drip vs. Dry

Average time people spend drying hands with a:

	HAND DRYER	PAPER TOWEL
Men	20 seconds	12 seconds
Women	25 seconds	9 seconds

Percentage of dryness achieved:

Men	55%	96%
Women	68%	93%

Average time to achieve 95% dryness:

Both Sexes	43 seconds	12 seconds
------------	------------	------------

Source: University of Westminster, London

Inc., a Lexington, Mass., research and development group, to get Excel into the faster hand-dryer game four years ago. Mr. Gagnon, who says his company generates about \$4 million a year in revenue and is profitable, said he would go for it if Invent Resources could create a maintenance-free, cost-effective product. So far, Excel hasn't pinpointed the final cost but hopes to sell the XLERator for no more than \$550, or about 25% higher than its priciest model currently.

To bolster the product, Invent Resources got a patent and produced a 10-page paper explaining the science behind the new machine. Its study says there are two types of water left on your hands after you wash: loose droplets and a "stagnation boundary layer" that adheres to the skin. That stagnation layer takes a long time to dry off using old dryer technology. The new dryer first blasts air to knock off the loose water within three seconds. Then as the heat rises to a hot-but-not-scorching 135 degrees, the combination of evaporation and the force of air breaks apart the second layer in 12 seconds or less.

The question of speed, however, matters little to some clean freaks. Rene Donlan, a self-described germaphobe working at the Luther College library in Decorah, Iowa, which has only hand dryers, says she prefers paper towels so she can also palm the germ-ridden doorknob, fearful that some people don't wash their hands at all. She ends up braving the naked doorknob, then hurrying to another sink near her desk. "I will wash my hands again there and use a paper towel to dry them," she says.

EXHIBIT 2

MAINTENANCE SUPPLIES TECH DIRECT



Finding A Quick-dry Solution

By Carrie Ritzel

What is 10 to 15 seconds? It's the approximate time it takes record holder Gail Devers to run the 100-meter hurdles. It's the tidbits of fame "Survivor" participants are in search of. And it's the amount of time needed for the XLERator hand dryer to make your hands absolutely dry.

We all desire dry hands, but many of us don't have the patience to stand under a warm air hand dryer for 30 to 45 seconds or more. In fact, nine out of ten people opt for paper towels when given a choice in a public rest room. Capitalizing on this common distaste, Excel Dryer, Inc., set out to eliminate it with a faster solution.

"It took [our] realizing [that we] manufacture a product people don't like to use," explains Denis Gagnon, president of Excel Dryer, Inc. Confronting this pet peeve, Excel spent three years researching and developing the technology that has proven to dry your hands in 10 to 15 seconds.

The science behind it

Excel is the first company to conduct a thorough and scientific evaluation of the physical processes involved in warm air hand drying. To begin, Excel partnered with the research team Invent Resources, Inc. (Lexington, Massachusetts) to study the process of hand drying. According to Gagnon, they knew the 20 amp circuit, which carries 2200 watts of power, just needed the right vehicle to deliver effective and efficient drying. They first had to start at the beginning to "test methodologies and scientific parameters" to scientifically define what "dry" means.

A 10 page White Paper written by the research team on the "Scientific processes that contribute to the drying of hands" found that there are two types of water left on your hands after washing: loose droplets and an adherent water layer, or "stagnation boundary layer", that adheres to the skin. The challenge was to remove each layer separately "and with a method especially tailored for each".

First, the XLERator removes the loose



XLERator dries hands in about 10 seconds. Through studies, Excel Dryer developed this 20 amp circuit to work quickly and effectively.

water within three seconds with a strong blast of air in what the paper calls the blow off phase. The XLERator uses a forceful blower system, as opposed to standard dryer technology which "generates an air stream with less force than what is required to remove the loose water". In the second phase, the remaining water is quickly evaporated by a very focused air flow from their patented air outlet, which keeps the air flow temperature above 135 degrees at the hands.

By weighing paper

towels before and after wiping hands, the research team determined that .2 grams of residual water or less remaining on the hands is what makes them "feel" dry. They then applied this .2 gram standard to their warm air dryer and reached it in 10 to 15 seconds. Drying your hands with paper towels takes eight to 12 seconds.

Field-test translations

To implement and prove their findings, Excel set-up interactive test center booths at several trade shows during

the past year for end-users to experience—literally first hand—the technology and advancement of their new product. Participants washed their hands and tried Excel's own top of the line conventional, warm air dryer. Then they rinsed their hands and used the XLERator. A stop watch yielding Excel research team member timed participants using both dryers to prove that the XLERator is three times faster.

Excel also tested their new product with independent validation. Focus groups were probed to authenticate Excel's assumption that the XLERator worked significantly faster, and that it would be well received. Remarkably, at the end of the focus group, 80 percent said they'd use the XLERator instead of paper towels. "There was an unbelievable turn in attitudes," notes Gagnon.

Feel the power

With less than 10 percent of public rest rooms utilizing warm air dryers and most relying on paper towels, the XLERator is a "pure source reduction alternative," says Gagnon. "It doesn't require the cutting down of trees, the refuse of used towels, or the time and labor associated with stocking product.

With a patent issued, a second one

Supported by research, the XLERator delivers:

- Three times faster drying effectiveness (10 to 15 seconds vs. the 30 to 45 of standard units)
- Increased Hand Comfort during and at the end of drying (test groups stated they felt like their hands were being massaged)
- 90 percent savings vs. paper towel costs
- Saves energy (used one third of the energy required by conventional hand dryers)

pending, the XLERator is headed for America's public rest rooms next month. It's out to significantly change the way we feel about warm air dryers.

Carrie Ritzel is a marketing professional and freelance writer with the Jani-King Company.

EXHIBIT 3



Environmental Building NewsTM

The Leading Newsletter on Environmentally Responsible Design & Construction

A Publication of BuildingGreen, Inc.

SPECIAL REPRINT

Volume 11, Number 1 • January 2002

Product News & Reviews

XLerator—The Electric Hand Dryer Reinvented

In public lavatories, I've always reached for paper towels instead of using the electric dryer, feeling satisfied that I'm conserving energy. Another motivation, though I wasn't so quick to admit it, is that I'm too impatient to wait around while my hands dry. Now Excel Dryer, Inc., has me reconsidering. Its new XLerator hand dryer gets hands dry in one-third the time, and uses about one-third the energy, of conventional dryers. We were skeptical at first, too. Read on.

When Denis and Nancy Gagnon bought Excel Dryer four years ago, they entered an industry that hadn't seen significant innovation, aside from automatic sensor controls, in decades. Determined to create a better mousetrap, they commissioned some research and learned that wet hands have water in two forms: loose droplets and an adherent film. They realized that by blowing the droplets off with a high-velocity air stream, they could eliminate most of the water in just a few seconds. Providing this air at a higher temperature than that of standard dryers 135°F (57°C) results in quicker removal of the water film as well, so hands are dried in 12 to 15 seconds—about the same amount of time it takes to use a paper

towel. The Gagnons' claim, which we have verified, is that conventional dryers take 30 to 45 seconds.

In addition to more effective drying, the XLerator is redesigned to draw only 1,500 watts, instead of the usual 2,200. This lower power requirement makes it easy to install the machines in older buildings, where it

contributes to the overall energy savings (see chart and table). The XLerator is not the first to use high-speed air to dry hands, but competing products—used mostly in industrial settings—do not heat the air, so they feel cold and leave a wet film on the skin. If there is a downside to this approach, it may be in the noise generated by this airflow, which approaches 90 decibels. Tony Caputo, who installed XLerator hand dryers at his Red Rose Pizza restaurant in Springfield, Massachusetts, does not con-

sider noise to be a problem. "I haven't had anyone complain about the noise," he told EBN, though he acknowledged that his restrooms are somewhat isolated from customer tables. Our own observations are that the noise is primarily from the airflow deflection; when we held our hands further from the dryer it became much quieter, but the drying time also increased.

(continued, page 2)



Photo: Alex Wilson

With a new approach to hand drying, XLerator makes electric dryers a green choice.

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Quote of the month

"It just doesn't make sense to put in a \$10,000 heating system to provide \$100 worth of heat per year."

Marc Rausenbaum, P.E.

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Product News & Reviews

The XLERator clearly outperforms conventional electric hand dryers, but how does it compare to paper towels? At our request, LCA experts Greg Norris of Sylvatica, Inc. and Bev Sauer of Franklin Associates, Ltd. consulted data from Franklin Associates as used in the SimaPro LCA software. The results, as shown in the table above, show that just on the basis of energy use electric hand dryers are far better, without even considering the many other environmental impacts of the manufacture and disposal of paper, including resource depletion, water pollution, and solid waste. A recent study commissioned by Airdri in the U.K. and performed by Environmental Resources Management reached the same conclusion.

For Tony Caputo the biggest advantages to the XLERator dryers are the labor savings in his restrooms and the speed of drying. When they used paper towel dispensers, he had to have someone clean the restrooms every two hours because of the heavy usage (up to 2,100 customers on a typical Friday, including lots of kids). And as for the speed of drying, he didn't believe the dryers would actually dry hands in as little as 10 seconds and was willing to accept 20. "It really is under 10 seconds," he said. Interestingly, the dryers have become a topic of conversation in his restaurant, with customers telling each other that they just have to check them out. "It's something that people have never seen," he said.

While we've examined a lot of products at EBN, I don't think we've ever talked to anyone quite as enthusiastic as Caputo. "Wow! just wow!" he told us, "I couldn't be happier." The company is currently shipping a 110-volt unit and awaiting UL approval on the 208-volt model. A 277-volt unit is also in the works. The 110-volt model lists for \$550. —NM

For more information:

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